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Case Report

Autoimmune Encephalitis a Differential Diagnosis of Auditory Hallucination: A Case Report

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Introduction

Anti-N-Methyl-D-Aspartate Receptor (anti-NMDAR) has been the first specific-antibody type to be associated with Autoimmune Encephalitis [1]. Autoimmune encephalitis is associated with the neuropsychiatric symptoms including abrupt personality changes, cognitive decline, memory loss, perceptual disturbances among many others. Initial presentation might range from agitation, psychosis, and changes in speech, hallucinations, involuntary motor movements and autonomic dysfunction [2]. In general adult population are found to have higher association with paraneoplastic conditions and specific antibodies, but the pediatric age group do not show the strong association making the diagnosis a difficulty [3]. Also unlike adults association with cancer is also found to be less likely [4]. Due to these complications cases of autoimmune encephalitis are usually missed in pediatric population when focusing more on the psychiatric symptoms. Here we present a case of 14 year old boy who had a similar presentation.

Case Report

A 14 year old male presented to Child & Adolescent Psychiatry OPD with the complaints of excessive thoughts, forgetfulness and auditory hallucinations. According to the patient his mind has been occupied by excessive thoughts for last 4 years while auditory hallucination has begun 2 years back while he was within his residence for an extended duration during the lockdown. Her mother who had accompanied him claimed he used internet frequently throughout that period.

He is a twin child, and while his birth weight was below normal, his developmental milestones were regular. There is no substantial mental history among his immediate family. The toxicology report was negative with the exception of Benzodiazepines prescribed by the neurology department.

On mental state examination, he appeared unkempt, lacked eye contact, and was restless. His speech was fluent, yet he varied between low and high tones. He regarded his mood as "bad" and characterized it as somewhat sad and unsettled. He exhibited a lack of emotion and reaction to situations. His thought form was poor, and his thought content was occupied with recurrent auditory hallucinations. There was abnormal perception such as auditory hallucination, which he described as second person hallucination with constant directives. The patient did not have any plans or intentions to harm him and was not regarded high risk. His cognition of time, location, and person was intact. He recognized the psychological nature of his condition and acknowledged his need for treatment.

Initially, he presented to the Psychiatry Outpatient Department (OPD) of Patan hospital with complaints of excessive thinking, forgetfulness, difficulty of concentration, and odd behaviors such as self-muttering. He was diagnosed with anxiety disorder not otherwise specified and given SSRI. Six months later, at his next appointment, his symptoms had deteriorated, and complained of sleep disturbances and auditory hallucinations. He was then admitted to the Psychiatry ward of Teaching

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Hospital for probable psychosis and treated with Haloperidol, but his symptoms, especially the auditory hallucinations, did not lessen. After consulting with the Neurology department, he was moved and a lumbar puncture was performed. An autoimmune encephalitis investigation panel was then requested. MRI was also performed; however the results were inconclusive probably because MRI is positive in only one-third of instances. On the basis of clinical judgment and after ruling out infectious reasons, the patient received intravenous steroids for five days, which considerably alleviated his acute symptoms. He was discharged following completion of the pulse steroid medication and normal readings of inflammatory markers.

He had been symptom-free for months, and then his problems gradually returned. The residual symptoms of his autoimmune encephalitis were then treated by a joint Neurology and Psychiatry department. Memory loss, excessive thoughts, and auditory hallucinations were his primary concerns during this period. His mother also complained of unusual resting body movements. The patient next underwent an EEG, which revealed mild localized epileptiform activity in the temporal lobe, a common finding in nearly 60% of cases. The boy and his mother were counseled regarding his residual symptoms, and he was prescribed Olanzapine and Levetiracetam, which significantly reduced his auditory hallucinations and abnormal body movements.

He is still receiving frequent follow-up care and has returned to school. He is doing well while on Olanzapine 20mg and Sodium Valproate 500mg. On the Mental Status Examination, he has considerably improved in terms of eye contact and grooming. Has a wide vocabulary, characterizes his mood as "better," and reacts appropriately to the circumstance. There is no evidence of an abnormal thought process or content. Persistent auditory hallucinations have still affected his perception, but his insight and judgment remain intact.

Discussion

The case report sheds light on an atypical presentation of autoimmune encephalitis in an adolescent patient, presenting with auditory hallucination and thus having a delayed diagnosis. Autoimmune encephalitis is a challenging condition to diagnose, particularly in pediatric patients. There are currently no clinical studies for NMDA encephalitis in children, thus there are no diagnostic criteria or significant evidence of autoantibodies or neoplasms linked with it [5]. This case report also highlights the importance of considering atypical symptoms that may have only clinical basis of diagnosis. As challenging as the diagnosis is, the post-inflammatory state, in which there are many lingering psychological issues that cause distress among the patient and family members and raise the cost of therapy when seeking assistance from multiple specialists, is much more challenging. Therefore, education regarding the progression and prognosis of the disease must be well presented. The monitoring of prospective flare-ups and relapses requires a multidisciplinary approach and regular follow-up. Depending on the patient's needs. Immunomodulatory therapy recommendations can be explored if symptomatic treatment fails to alleviate residual symptoms.

Conclusion

Autoimmune encephalitis can have varied clinical manifestations and this may pose a challenge for diagnosis. Since the diagnosis and long term management have significant implications for patients, their families and therapeutic management, one should consider autoimmune encephalitis as one of the possibilities even when a pediatric patient presents solely with psychiatric symptoms.

Author Statements

Informed Consent

Written Informed consent was taken from patient and patient's attendant.

Acknowledgement

We would like to acknowledge patient and patient attendant for giving us consent to write this paper.

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